



GREAT PLAINS

Center for Agricultural Health

Annual Report period: 9/30/2013 - 9/29/2014

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SECTION I

CENTER SUMMARY

The Great Plains Center for Agricultural Health at The University of Iowa is a nationally recognized resource with an established record of developing and implementing programs of research, intervention, translation, education, and outreach to prevent occupational injury and illness among agricultural workers and their families. The Center addresses the health and safety needs of agricultural workers in the Midwestern states of Iowa, Missouri, Kansas, Nebraska, Illinois, Wisconsin, Minnesota, South Dakota, and North Dakota. These states constitute America's most agriculturally intensive region.

The overall goals of the Great Plains Center for Agricultural Health are to:

1. Conduct multidisciplinary research targeting national priorities for agricultural health and safety.
2. Develop and evaluate educational, outreach, and intervention programs to prevent disease, injury, and hazardous exposures among agricultural workers.
3. Serve as a national resource for delivery of agricultural health knowledge and expertise to industrial hygienists, epidemiologists, ergonomists, veterinarians, and physicians to enhance the national capacity to meet the agricultural health and safety needs.
4. Provide agricultural health and safety technical assistance and consultation to health and safety professionals, community-based agricultural health organizations, and agricultural producers, themselves.
5. Maintain and strengthen linkages with health professionals in academic institutions, state and federal agencies, and international organizations to promote agricultural health and safety efforts.

RELEVANCE

Agricultural workers experience high rates of fatal and nonfatal occupational injury and illness when compared to other employed groups. As the region's most well-established agricultural health and safety resource, Great Plains Center activities are highly relevant to agricultural workers, health department officials, community organizations, public health scientists, physicians, and researchers committed to protecting the health and safety of all persons engaged in agricultural work. Relevance is described by project, below.

KEY PERSONNEL

Name	Role in Center	Email Address	Phone
Gerr, Fredric	Center Director	fred-gerr@uiowa.edu	319-335-4212
Anthony, Renee	Project Leader	renee-anthony@uiowa.edu	319-335-4429
Fethke, Nathan	Project Leader	nathan-fethke@uiowa.edu	319-467-4563
Rohlman, Diane	Project Leader	diane-rohlman@uiowa.edu	319-384-4007
Parker, Edith	Project Leader	edith-parker@uiowa.edu	319-384-1472
Peek-Asa, Corinne	Co-investigator	corinne-peek-asa@uiowa.edu	319-335-4895
Ramirez, Marizen	Project Leader	marizen-ramirez@uiowa.edu	319-335-4425

CENTER WEB LINK

<http://CPH.uiowa.edu/GPCAH/>

SECTION II

PROGRAM HIGHLIGHTS OF HIGH IMPACT

Intervention to Reduce Aerosol Exposures in CAFOs (R Anthony)

The focus of this project is to improve the air quality of swine CAFOs using standard mechanical ventilation design methods typical of industries other than agriculture.

During the winter of 2013-14, a laboratory tested shaker dust control filtration unit was deployed in a swine farrowing barn. 2013-14 was the coldest winter in 35 years and the 9th coldest in 141 years, providing researchers the opportunity to test this system in an extreme-cold season. Filtered air was returned to the barn in two locations, and indoor air quality was sampled at six locations in the barn, both with and without the new ventilation system on. ***Indoor air quality was significantly improved when the filtration system was operating; inhalable dust concentrations were reduced by 32% and respirable dust concentrations were reduced by 40%.***

Air quality was monitored to ensure that concentrations of gaseous pollutants were not *increased* by the system operation. The test barn had no detectable hydrogen sulfide, carbon monoxide, or combustible gases throughout the season. Ammonia and carbon dioxide concentrations exceeded the industry-recommended limit when the system was both on and off. Venting the gas-fired heaters to control carbon dioxide concentrations is recommended and will be assessed during the winter of 2014-15.

Focus groups are being conducted to assess producer's interest in adopting this type of wintertime ventilation in confinement buildings. In addition, laboratory simulation models are being developed to reflect the actual field conditions experienced in the swine farrowing barn during the winter of 2013-14. The ultimate goal is to develop a readily-available and cost-effective ventilation technology for hog producers.

Farm Equipment Crash Study (M Ramirez)

In nine Midwest states (IL, IA, KS, MN, MO, NE, ND, SD, WI), about 1000 crashes involving farm equipment occurred from 2005-2008. Unfortunately, very little is known about how to prevent these crashes and minimize subsequent injuries. The aim of this project is to provide important information about farm equipment crashes in these nine states and to assess farm equipment lighting and marking policies to assess their effects on crash prevention.

The study team accessed farm equipment crash data from 2005 to 2010 from all nine state Departments of Transportation, combined datasets, and geocoded (address-matching) crash locations on maps of the region. Results indicate that farm equipment crashes are not just a rural problem. ***About 70% of crashes involving farm equipment occur in rural zip codes, while 30% occur in urban zip codes. Crashes are much more likely to occur on high speed roads (over 50 MPH speed limits), roads that have high traffic density***



Installed ductwork



Shaker dust collector

(more than an average of 361 motor vehicles per mile per day), farm to market routes, and roads with smaller lanes and smaller road widths.



Lighting and marking policies from all nine states were collected and analyzed and compared with standards offered by the American Society for Agricultural and Biological Engineers (ASABE). Illinois had lighting and marking policies most consistent with ASABE. In contrast, Missouri had the lowest compliance with ASABE.

A survey is currently being conducted with farm operators from the same nine states, in collaboration with the US Department of Agriculture's National Agricultural Statistical Service. The survey asks about use of farm equipment on public roads, lighting and marking practices, and crashes as well as near-misses. To date, we have collected data from 1700 farmers, with the goal to survey at least 3600 farmers throughout the nine states.

Musculoskeletal Symptoms among Agricultural Workers (N Fethke)

Musculoskeletal symptoms and disorders are common and potentially disabling conditions among agricultural workers. This study is providing new information about the physical demands experienced by agricultural workers while performing common tasks and how forceful muscular exertions, awkward postures, repetitive activities, and whole-body vibration are linked to the pain, injuries and illnesses of the musculoskeletal system experienced by agricultural workers. Agricultural workers enrolled in this study by completing a musculoskeletal health survey. Repeat surveys are administered every six months to all participating workers. A fifth round of follow-up surveys was completed in 2013-14.

At the time of entry into the study, musculoskeletal symptoms were reported by a large proportion of agricultural workers, ranging from 23% to 48% depending on anatomical area (low back, neck/shoulder, or elbow/wrist/hand) and season. ***Risk of musculoskeletal symptoms increased with greater time spent engaged in agricultural equipment repair or maintenance, moving animals, milking animals, and manual material handling.*** An article in the *American Journal of Industrial Medicine* (in press) describes these results in greater detail.

During 2013-14, on-farm measurements of muscle activity, posture, and whole-body vibration were completed with 49 participants. Analyses of these measurements are underway, and preliminary results were presented at the annual meeting of the International Society for Agricultural Safety and Health (ISASH). Working with the trunk flexed to angle of 45° or more is a suspected risk factor for low back pain. This posture was observed commonly while agricultural workers were using agricultural vehicles during field work (e.g., combining and planting), handling harvested crops, repairing equipment, and milking animals. Whole-body vibration data was collected from more than 60 agricultural vehicles while performing a wide variety of agricultural tasks. Relationships between vehicle types, seat vibration damping, and levels of whole-body vibration are being explored and will allow us to make evidence-based recommendations for controlling this hazardous exposure.

Advancing Research to Practice through Community Partners (F Gerr)

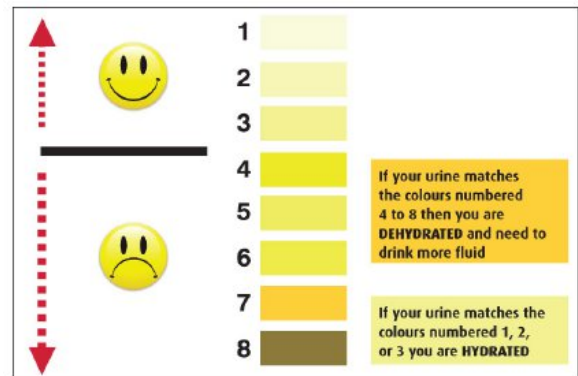
The goal of this program is to strengthen the regional safety and health organizations who serve our nine state region and to aid them in developing evidence-based agricultural health and safety services. The Center facilitates a two-way flow of information between agricultural producers and GPCAH staff.

GPCAH Project Leaders met three times with the GPCAH Regional Advisory Committee (composed of agricultural health and safety specialists from our nine state region) in 2013-14 to discuss the Center's annual needs assessment, potential enhancements to the Center's Pilot Grant program, regional agricultural health and safety issues of importance, and development of the Center's strategic plan.

We continue to foster across-center communication and collaboration:

- A representative from each of two NIOSH funded sister centers, the Central States Center for Agricultural Safety and Health (CS-CASH, Omaha, NE) and the Upper Midwest Center for Agricultural Safety and Health (UMASH, Minneapolis, MN), continues to serve on our advisory committee.
- In May, 2014, Great Plains Center project leaders traveled to UMASH in Minneapolis for the first UM-IA Research Exchange Meeting. Over 40 project leaders, research fellows, and graduate students met to discuss opportunities for collaboration on emerging agricultural health and safety issues.
- In June, 2014, the Great Plains Center co-sponsored the annual meeting of the International Society for Agricultural Safety and Health (ISASH) hosted by our sister center, CS-CASH.
- In September, 2014, we collaborated with CS-CASH to present agricultural health and safety exhibits at Husker Harvest Days in Grand Island, Nebraska.
- The Great Plains Center co-sponsors the largest annual agricultural safety and health conference specifically targeting agricultural health issues in the upper US Midwest (The Midwest Regional Agricultural Safety and Health Conference, MRASH). The MRASH conference during the reporting period was held in, Ames, Iowa, in November, 2013. Approximately 100 attendees participated in this two day event.

We continue to modernize and upgrade our website. This year we have added links to our new Facebook page and the US Ag Centers' YouTube videos. The Center continues to support "Ask and Ag Expert.com", a direct link between the community and university faculty and staff to answer health and safety questions and encourage timely communication with farmers and producers.



Urine Color Chart for Kids

During 2013-14, we again emphasized direct and personal contact with agricultural producers through our "GPCAH - On the Go" campaign:

- GPCAH Staff traveled to over a dozen farm shows and county fairs in seven Midwestern states to present hearing protection, heat illness, and safe play on the farm demonstrations.
- The GPCAH outreach coordinator assisted with Progressive Ag Safety Days at the National Educational Center for Agricultural Safety, and directed youth education programs at several county fairs.
- Over 700 water bottles and age-appropriate and easy to use educational materials for kids on heat illness (urine color chart) and safe play on the farm were distributed at regional farm shows.
- A multi-faceted campaign, including a panel display and educational brochures, was presented at regional farm shows to promote hearing protection among agricultural workers. Over 1000 inexpensive, but highly effective ear plugs (NRR=29-33 db) were distributed as folks discussed hearing protection with GPCAH staff.

The Center continues to publish a quarterly newsletter in which we disseminate practical, evidence-based information needed for prevention of agricultural injury and illness. The Alive and Well newsletter has a



FFA Students checking out ear plugs at Husker Harvest Days 2014

large distribution across the upper Midwest and is available in both electronic and print format. The most recent newsletter and an archive of past newsletters is available at

<http://www.publhealth.uiowa.edu/gpcah/farm-families/index.html>

Finally, in order to maximize the impact of our dissemination efforts, we conducted a survey of preferred communication channels among agricultural producers. Approximately 200 agricultural producers were surveyed with questions about how

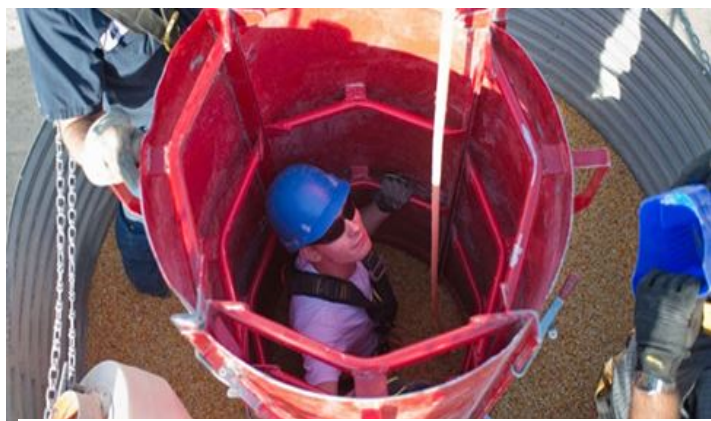
often they used various channels of communication and to what extent they trusted them. ***Contrary to expectation, results indicated that agricultural workers prefer to receive agricultural safety and health information from legacy media (newspapers and magazines) and that they trust legacy sources more than any other commonly used source (e.g., the internet).*** Also relevant was the fact that some highly trusted sources (e.g., doctor's offices and university personnel) were only infrequently used and represented untapped channels by which additional safety and health messaging could be delivered.

Building Capacity of Agricultural Safety and Health Specialists (D Rohlman, F Gerr)

The Agricultural Medicine Core Course has been the national model of effective agricultural safety and health education for a decade. It provides a strong foundation in the principles of agricultural safety and health for safety and health managers, graduate students, nurses, physicians, veterinarians, and anyone interested in the special health and safety needs of rural and agricultural communities. The annual delivery of the course at the University of Iowa continues to be very well attended and is available for graduate college credit or Continuing Medical and Continuing Nursing Education Units.

The Agricultural Medicine Core Course, with assistance from Great Plains Center faculty and staff, has been delivered in Vermont, Nebraska, North Carolina, and Alabama and Australia. The Course will soon be delivered in Texas. Delivery of the course in each location includes the development of regionally-specific agricultural health and safety content. Since 2011, the course has been delivered fifteen times to a total of 311 trainees. We know of no other agricultural health and safety educational program that has enjoyed such widespread dissemination and such enthusiastic reception.

Because agriculture technology continues to change and the knowledge and skills needed by safety and health specialists evolves as a result, we have been active in our efforts to update the course and the supporting curriculum. A panel of experts has contributed valuable content to the process. This year we have begun to integrate the revised curriculum into the course. Topics addressing injury and illness prevention and transportation hazards have been added to the curriculum as have a set of new case



Grain Bin Rescue Demonstration June 2014

studies. The revised course will have greater emphasis on identification and mitigation of safety hazards and added emphasis on prevention of agricultural illness.

In order to demonstrate to students the hazards of working in grain bins and the difficulty of conducting a rescue operation, in partnership with the National Education Center for Agricultural Safety (NECAS) at the Northeast Iowa Community College, a grain entrapment rescue training demonstration was part of the June 2014 Rural Health and Agricultural Medicine class at the University of Iowa. The event was covered by local and regional radio, TV and print media. Members of the College of Public Health, community members, and stakeholders, including local politicians were invited to view the demonstration.

Evaluation Program (E Parker)

Evaluation Program. The Evaluation Coordinator, Marsha Cheyney, participated in numerous collaborative ventures with evaluation and outreach personnel from other NIOSH-funded Agricultural Safety and Health Centers this year. She leads the evaluation of the joint “US Ag Center” YouTube channel, and is a member of the national Agricultural Safety and Health Awareness working group.

The 2013-14 evaluation of the leadership and administration of the Great Plains Center was conducted using new processes and revised instruments. An Internal Advisory Committee focus group was held in September 2013 and the GPCAH leadership survey of all Center faculty, staff, and students was completed in December 2013. Center evaluation data was moved to a new database to improve data entry and reporting efficiency.

The evaluation team continues working with the outreach team to increase the Center’s outreach efforts:

- The annual survey of the Regional Advisory Committee was completed in November 2014 and was augmented by in-depth telephone interviews. Information was collected about activities occurring in the GPCAH nine-state region to help identify gaps in outreach efforts and potential areas for collaboration between the Center and Community Partner organizations.
- The evaluation team developed and implemented the Farm Health and Safety Concerns survey. Nearly 200 farmers and farm workers completed this short survey about their health and safety concerns on the farm at large farm shows throughout the GPCAH nine-state region.

Surveillance Program. (C Peek-Asa) Research on agricultural fatalities has consistently identified tractor overturns as one of the leading causes of death among agricultural workers. However, much less is known about non-fatal injuries associated with tractors. The GPCAH Surveillance Core aims to provide our partners with information about the frequency and characteristics of fatal and non-fatal agricultural injuries.



To achieve this goal, Iowa Trauma Registry data was analyzed to identify non-fatal injuries associated with tractors. Between 2002 and 2012, 535 tractor-related non-fatal traumatic injuries were found in the Registry. ***Males (93%) had non-fatal tractor injuries far more often than females. Rollovers and falls were the most frequent cause of injury. Tractor rollovers, run-overs, and roadway collisions led to the most severe traumatic injuries. Nearly a third of injured individuals had a hospital stay of four days or more.*** Information from this report will be developed into a partner report and a peer-reviewed manuscript.

After a traumatic injury, timely access to trauma care is a critical factor in survival and recovery – often termed the “golden hour.” Using the Iowa State Trauma Registry, Surveillance Program faculty and staff examined time to definitive care, comparing agricultural injuries, work-related injuries in other industries, and work-related injuries to rural workers. Analyses will include the effects on injury outcome of *discovery time* (time to discover that an injury has occurred), time needed for responders to extricate, stabilize, and leave the scene with the injured person, and *time to definitive care* (time to reach the final treating hospital).

Compared to workers in other rural areas, individuals injured during agricultural activities are more likely to be transported by private vehicle and less likely to use Emergency Medical Services. Compared to urban populations and other injuries, it takes longer for rural populations and those with agricultural injuries to reach definitive medical care.

Pilot Feasibility/Emerging Issues Program (F Gerr)

This program is an incubator for new research, prevention, intervention, outreach, education, evaluation, and translation activities. The Great Plains Center offers pilot funding to both community-based and academic organizations engaged in agricultural safety and health activities. Four pilot projects were funded during 2013-14:

- | | |
|-----------------------|--|
| Project Title: | Piloting an occupational ATV/UTV safety workshop for Iowa farmers |
| PI: | Charles Jennissen, MD, University of Iowa, Department of Emergency Medicine |
| Co-Investigators: | Kari Harland, PhD, University of Iowa, Iowa Injury Prevention Research Center;
Gerene Denning, PhD, University of Iowa, Iowa Injury Prevention Research Center;
Andy Winborn, BS, Rural Health and Safety Clinic of Greater Johnson County |
| | |
| Project Title: | Promoting harness and lifeline use in grain bin entry for farm and elevator workers through development, training, and distribution of specific lifeline Installation/procedures/use training curriculum |
| PI: | Bob Aherin, PhD, Grain Handling Safety Coalition, University of Illinois |
| Co-Investigators: | Davis Hill, BS, EMT-P, Emergency Services Rescue Training, Inc. |
| | |
| Project Title: | Evaluation of technology-based interventions to increase the use of hearing protection among adolescent farmworkers in Iowa |
| PI: | Khalid Khan, DrPH, University of Iowa, Department of Occupational and Environmental Health |
| Co-Investigators: | Diane Rohlman, PhD, University of Iowa, Department of Occupational and Environmental Health; Andy Winborn, BS, Rural Health and Safety Clinic of Greater Johnson County; Salome Tonelli, MSN, Rural Health and Safety Clinic of Greater Johnson County |
| | |
| Project Title: | Effect of elevated carbon dioxide on lung inflammation in barn dust instilled mice |
| PI: | David Schneberger, PhD, University of Nebraska Medical Center |

APPENDIX A

GPCAH Outputs

October 2011 through September 2014

Great Plains Center for Agricultural Health	Y1 (2011 –12)	Y2 (2012 -13)	Y3 (2013 –14)	Total (2011-14)
Publications	12	8	7	27
Abstracts & Presentations	16	18	17	51
Lectures, Seminars, & Workshops	120	103	72	295
Consultations	8	24	14	46
Information to Policy Makers	3	6	5	14
Technical Reports	0	1	2	3
Press Releases & Media Stories	20	7	9	36

Manuscripts Accepted for Publication

Anthony TR, Park JH, Altmaier R, Peters TM. (2014) Modeled effectiveness of ventilation with contaminant control devices on indoor air quality in swine farrowing facility. *Journal of Occupational and Environmental Hygiene*, 11:434-449. [PMID: 24433305]

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Donham KJ, Kline AK, Kelly KM, Lange JL, Rautiainen RH. (2013) Respirator and Hearing Protection Use in the Certified Safe Farm. *J Agromedicine*. 2013; 18(1):18-26.

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Douphrate DI, Fethke NB, Nonnenmann MW, Rosecrance JC, Reynolds SJ: (2012) Full shift arm inclinometry among dairy parlor workers: a feasibility study in a challenging work environment. *Applied Ergonomics*, 43(3):604-613. (PMID: 22019358)

Douphrate DI, Gimeno D, Nonnenmann MW, Hagevoort R, Rosas-Goulart C, Rosecrance J (2014). Prevalence of work-related musculoskeletal symptoms among US large-herd dairy parlor workers. *American Journal of Industrial Medicine*. 2014 Mar;57(3):370-9.

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O'Shaughnessy PT, Peters T, Donham KJ, Taylor C, Altmaier R, Kelly K: (2012) Assessment of swine worker exposures to dust and endotoxin during hog load-out and power washing. Ann Occup Hyg, 56(7): 843-51.

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Olson J, Rohlman D (2014). Longitudinal assessment of chlorpyrifos exposure and self-reported neurological symptoms in adolescent pesticide applicators. BMJ Open. 2014 Mar 4;4(3).

Kline A. (2012): Building Capacity of Agricultural Medicine – The Academy of Instructors. Midwest Rural Agricultural Safety & Health Conference. November 16-17, 2011, Johnston, IA.

Madsen M, Donham KJ (2013): Farm and Ag injuries in press clips. 2013 Upper Midwest Agricultural Safety and Health Annual Forum. April 17, 2013, St. Paul, MN.

Manz N, Silver K, Fethke N, Hoffman K, Lounsbury S, Florence J. (2012): Building a consensus for tomato grower ergonomics: a community-based expert panel study. American Public Health Association 104th Annual Meeting and Exposition. October 27-31, 2012, San Francisco, CA.

Park J, Peters T, Altmaier R, Sawvel R, Anthony TR (2013): Improving Indoor Air Quality in Swine CAFO Using Enhanced Ventilation and Engineering Controls. International Society Agricultural Safety and Health 2013 Annual Meeting. June 23-27, 2013, Sandusky, OH.

Ramirez M, Gerr F. (2012): Agriculture injury surveillance: collaborations between academia and government. Council of Territorial and State Epidemiologists National Meeting. June 3, 2012, Omaha, NE.

Ramirez M., Greenan, M. (2012): Farm Equipment on the Roadway. Midwest Rural Agricultural Safety & Health Conference. November 13-15, 2012, Cedar Rapids, IA.

Ramirez M., Fisher, E., Ellis T, Rautiainen, R, Lee, B. (2012) A Process Evaluation of Safe Play Areas on Farms. Midwest Rural Agricultural Safety & Health Conference. November 13-15, 2012, Cedar Rapids, IA.

Ramirez M. (2013): Farm lighting policy and frequency of crashes. 2013 National Meeting of the Safe States Alliance and the Society for Advancement of Violence and Injury Research. June 3-7, 2013, Baltimore, MD.

Ramirez M., Fisher, E., Ellis T, Rautiainen, R, Lee, B. (2013): Motivating families to create safe play areas on farms; a randomized trial. National Meeting of the Safe States Alliance and the Society for Advancement of Violence and Injury Research. June 3-7, 2013, Baltimore, MD.

Ramirez M, Bedford R, Harland K, Cavanaugh J, Peek-Asa C (2014). Do Policies for lighting and marking of Farm Equipment on the Roadway reduce crash risk. International Society of Agricultural Safety and Health (ISASH), Omaha NE, June 22-26 2014.

Ramirez M, Young T, Harland K, Wu H, Lundell J, Peek-Asa C (2014). Epidemiology of Farm Equipment Crashes in Nine Midwest States. International Society of Agricultural Safety and Health (ISASH), Omaha NE, June 22-26 2014.

Reeve KA, Anthony TR. (2012): Wintertime factors affecting contaminant concentration in farrowing barns. Student poster presented at American Industrial Hygiene Conference and Exposition. June 20, 2012, Indianapolis, IN.

Rohlman D, Abdel Rasoul G, Ismail A, Bonner M, Hendy O, Hamad L, Khan K, Al-Batanony M, Olson J (2014). Building Research Capacity in Egypt through Education and Training. 10th Anniversary Symposium for Brain Directors for the Brain Disorders in the Developing World: Research across the Life Span (BRAIN), Bethesda, Maryland.

Rohlman D, Shaw M, Huszar. (2013) Workplace demands and stress in hispanic farmworkers. Midwest Rural Agricultural Safety and Health Conference, Ames, IA. Nov 19-20, 2013.

Rudolphi J, Donham K (2013). Educational Changes to Agricultural Medicine. Midwest Rural Agricultural Safety and Health Conference. November 19-20, 2013.

Sawvell R, Anthony TR. (2012): Improving indoor air quality in swine CAFOs using enhanced ventilation and engineering controls. Midwest Rural Agricultural Safety & Health Conference. November 13-15, 2012, Cedar Rapids, IA.

Sawvel RA, Park JH, Altmaier R, Peters TM, Anthony TR. (2014) Evaluation of shaker dust collector for use in a swine farrowing barn. American Industrial Hygiene Conference and Exposition, San Antonio, TX, June 4, 2014.

Sawvel RA, Altmaier R, Jones S, Peters TM, Anthony TR. (2014) Details of a recirculating ventilation system for swine CAFO. International Society of Agricultural Safety and Health (ISASH), Omaha NE, June 2014.

Smith A. Access to Emergency Medical Care Among Agricultural Workers (2014). International Society for Agricultural Safety and Health Omaha, NE June 26-28, 2014.

Sullivan R, Ramirez M, Kraemer J, Peek-Asa C, Gergelt R. (2012): Toxicology testing in fatally injured workers. National Occupational Injury Research Symposium (NOIRS). October 18-20, 2011, Morgantown, WV.

Swanton A, Young T, Ramirez M, Peek-Asa C (2014). Time to definitive care following traumatic injury in farmers. International Society of Agricultural Safety and Health (ISASH), Omaha NE, June 2014.

Yang AY, Park JH, Altmaier R, Jones S, Peters TM, Anthony TR. (2014) Wintertime indoor air quality monitoring in a swine farrowing barn. American Industrial Hygiene Conference and Exposition, San Antonio, TX, June 4, 2014.

Lectures or Seminars Delivered at the University of Iowa

Anthony TR. (2012): Lectures: delivered to graduate OEH students for 175:230 (n=2 lectures).

Anthony TR. (2012): Lectures on agricultural health and safety delivered to graduate OEH students for 175:230 (n=6 lectures).

Anthony TR (2014): "Occupational Safety and Health in Agriculture" to 40 agricultural health professionals in Building Capacity – Agricultural Medicine course.

Anthony TR (2014): "Transportation Hazards in Agriculture" to 40 agricultural health professionals in Building Capacity – Agricultural Medicine course.

Anthony TR (2014): lectures on Agricultural Occupational Safety to 12 graduate students in Occupational Safety course (n = 10 lectures).

Anthony TR (2014): lectures on Agricultural Safety and Health to 20 graduate students in Rural Health and Agricultural Medicine course.

Anthony TR (2014): lecture on Agricultural Safety and Health to 12 graduate students in Occupational Health course.

Donham KJ (2011-12) Seminar: "Current topics in agricultural safety" delivered to students in 175:210 and 175:210EXW (n=8 class periods).

Donham KJ (2011-12) Seminar: Agricultural Safety: Theories & Practice" delivered to students in 175:176 and 175:196EXW (n=4 class periods).

Donham KJ (2011-12): Seminar: "Preceptorship in Occupational & Environmental Health" for 175:203 (n=3 class periods).

Donham KJ (2011-12): Seminar: "Research in Occupational and Environmental Health" for 175:201 (n=1 class period).

Donham KJ (2011-12): Seminar: "Rural Health and Agricultural Medicine" 175:209 (= 42 class periods).

Donham KJ (2011-12): Seminar: "Independent Study in OEH" 175:172 (n=3 class periods).

Donham KJ (2011-12): "Thesis/Dissertation" 175:300 (n=2 class periods).

Donham KJ (2012): Seminar: "Veterinary Public Health: The Profession" 175:211 (n=13 class periods).

Donham KJ (2013): Presentation: "Respiratory exposure for pork producers" delivered to 55 undergraduate agriculture students (n=1 class period).

Donham KJ (2013): Presentation: "Respiratory exposure for pork producers" delivered to Rural Health Interest Group (22 medical students and faculty) at UI College of Medicine (n=1 class period).

Donham KJ (2013): Lecture "Injuries and illnesses in agriculture" delivered to 21 graduate students in course 175:101 (n=1 class period).

Donham KJ (2013) Lectures on agricultural safety and health topics delivered to 39 agricultural health professionals in Building Capacity – Agricultural Medicine course. (n=14 lectures)

Donham KJ (2013): Seminar: "Rural Health and Agricultural Medicine" 175:209 (= 42 class periods).

Fethke N (2012) Lecture: "Case study of ergonomics in the tomato harvesting industry" delivered to students in a course lecture (n=1 lecture).

Fethke N (2012): Project presentations in graduate course 175:195 (n=2 lecture).

Fethke N (2013): Seminar: "Musculoskeletal symptoms among ag workers" delivered to faculty and graduate students in OEH Seminar. (n=1 lecture)

Fethke N (2013): Lecture "Anthropometry" delivered to 8 graduate students in OEH: 4310. (n=1 lecture)

Fethke N (2014): "Ergonomics in Agriculture" to 20 graduate students in Rural Health and Agricultural Medicine course.

Fethke N (2014): "Ergonomics in Agriculture" to 40 agricultural health professionals in Building Capacity – Agricultural Medicine course.

Gerr F (2012) Paper review: 'Musculoskeletal disorders among agricultural workers' delivered in Course 175:185 (n=1 lecture).

Gerr F (2012) Lecture: "Neurological effects of pesticide exposure" delivered to 25 Public Health MPH and PhD students (n=1 lecture).

Gerr F (2012) Paper Review: 'Asthma and pesticides' by Hoppin et al." delivered in Course 175:185 (n=1 review).

Gerr F (2012): review of agricultural papers, delivered to graduate students in course 175:185. (n=1 lecture)

Gerr F (2013): Seminar: "Agricultural lung disease" delivered to Occupational Health Residents. (n=1 lecture)

Gerr F (2013): Lecture: "Musculoskeletal disorders" delivered to group of 39 agricultural health professionals in Building Capacity – Agricultural Medicine course. (n=1 lecture)

Gerr F (2014): "Agricultural Respiratory Disorders" to 40 agricultural health professionals in Building Capacity – Agricultural Medicine course.

Gerr F (2014): "Occupational Skin Disorders" to 40 agricultural health professionals in Building Capacity – Agricultural Medicine course.

Gerr F (2014): "Musculoskeletal Disorders among Agricultural Workers" to 40 agricultural health professionals in Building Capacity – Agricultural Medicine course.

Gerr F (2014): "Musculoskeletal Disorders among Agricultural Workers" to 20 graduate students in Rural Health and Agricultural Medicine course.

Gerr F (2014): "Agricultural Respiratory Disorders" to 20 graduate students in Rural Health and Agricultural Medicine course.

Gerr F (2014): "Occupational Skin Disorders" to 20 graduate students in Rural Health and Agricultural Medicine course.

Gerr F (2014): "Agricultural Health" to 25 graduate students and faculty in the Occupational and Environmental Health Seminar Series.

Gerr F (2014): Article review of Lung disease in agriculture with 4 graduate students in Interpreting Occupational and Environmental Health Research Course.

Gerr F (2014): Review of agricultural health papers with 4 graduate students in Interpreting Occupational and Environmental Health Research Course.

Greenan M (2014): Lecture on utilizing GIS in analysis of agricultural equipment crashes on Iowa roadways to OEH seminar attendees.

Leonard S (2014): "Fatalities in Agriculture" to 40 agricultural health professionals in Building Capacity – Agricultural Medicine course.

Leonard S (2014): "Case studies in agricultural fatalities related to farm equipment" to 22 graduate students in Rural Health and Agricultural Medicine course.

Merchant J (2012) Seminar: "Impacts of industrial livestock production" delivered to OEH students and faculty (n=1 seminar).

Merchant J (2012) Seminar: “The children of Keokuk County” delivered to OEH students and faculty (n=1 seminar).

Merchant J (2012) Distinguished Faculty Lecture: “Advocating for rural health—Community-based research and policy (n=1 lecture).

Merchant J (2012): Seminar: “Farm Animal Protection and Health Policy” delivered to graduate OEH students. (n=1 lecture)

Nonnenmann M (2014): “Injuries from Physical Agents/Use and Selection of Personal Protective Equipment” to 40 agricultural health professionals in Building Capacity – Agricultural Medicine course.

Peek-Asa C (2014): “Time to Definitive Trauma Care for Farmers” at the I Love Science: Medical Science Training Program, UI College of Medicine.

Peek-Asa C (2014): “Time to Definitive Trauma Care for Farmers” at the Biomedical Health Science Research Week.

Peek-Asa C (2014): “Delays in Definitive Trauma Care for Farmers” to members of the multidisciplinary translational science program.

Peek-Asa C (2014): “Agricultural Injury” for the Intro to Injury and Violence Prevention (free course): general, road traffic safety, policy/advocacy, occupational health, and acute care sessions. (n=5 lectures)

Ramirez M (2012) Seminar: “Use of KCRHS for data analysis” delivered to MS/PhD students (10 class periods).

Sessions below presented by students in class:

Getchman B, Ramirez M (2012) Occupational Injury Seminar: “Alcohol Abuse and the EFFECTS OF Job Demand on a Population of Rural Women.”

Aamodt J, Ramirez M (2012) Occupational Injury Seminar: “Safety training among youth from Keokuk County Rural Health Study who engage in hazardous agricultural tasks.”

Smithart K, Ramirez M (2012) Occupational Injury Seminar: “The relationship between intimate partner violence and pregnancy in a rural setting: cross-sectional results from the KCRHS (1994-1998).”

Schwab Reese L, Ramirez M (2012) Occupational Injury Seminar: “PV directionality and risk factors in a rural community.”

Wentworth L, Ramirez M (2012) Occupational Injury Seminar: “Self-reported depression and suicide ideation: The Keokuk County Rural Health Study.”

Frederick M, Ramirez M (2012) Occupational Injury Seminar: “Intimate partner violence, self-efficacy, and depressive symptoms among adolescents in a rural setting in Iowa.”

Afolayan O, Ramirez M (2012) Occupational Injury Seminar: "Injury as a risk factor for depression in a rural community."

Ramirez M (2012) Lecture: "Farm equipment roadway crashes" delivered to NADS investigators and investigators from Marshfield, Queens University, and University of Alabama (n=1 lecture).

Ramirez M (2013) Lecture: "GIS in Inquiry ER" delivered to graduate students in Geography. (n=1 lecture)

Ramirez M (2013) Injury Epidemiology Course delivered to graduate students in Public Health. (n=1 lecture)

Ramirez M (2013) Lecture: "Safe play on farms" delivered to graduate students in Occupational Epidemiology course. (n=1 lecture)

Ramirez M (2013) "9-state Partnership" to graduate students in the UI Iowa Prevention Research Center.

Ramirez M (2014) "Agricultural Safety and Health" to 11 graduate students in the Epidemiology of Occupational Injuries course. (n=12 lectures)

Rohlman D (2014) "Case Study: Youth in Agriculture" to 40 agricultural health professionals in Building Capacity – Agricultural Medicine course.

Rohlman D (2014) "Case Study: Agricultural Environmental Health Issues" to 40 agricultural health professionals in Building Capacity – Agricultural Medicine course.

Rohlman D (2014) "Prevention of Illness and Injury in Agricultural Populations" to 40 agricultural health professionals in Building Capacity – Agricultural Medicine course.

Rohlman D (2014) "Pyramids, pesticides, & public health" to graduate students and faculty at the Global Health Symposium.

Rohlman D (2014) Seminar: "Rural Health and Agricultural Medicine" 175:209 (= 42 class periods).

Workshops, Seminars, Lectures Conducted by GPCAH Personnel in the Agricultural Community

Anthony TR (2014) lectures on Agricultural Safety and Health to 30 Agribusiness students at Kirkwood Community College (n = 2 lectures)

Cheyney M (2014) Workshop on Heat Illness prevention at the Jefferson County Fair - June 2014.

Cheyney M (2014) Workshop on Heat Illness prevention at Progressive Ag Safety Day – NECAS- July 2014.

Cheyney M (2014) Workshop for Ag-Citing Program at the Clay County Fair – September 2014.

Donham K (2012) Lecture: "Farm Safety Day" Rural Health Clinic of Greater Johnson CO. Delivered to farm families from Johnson, Iowa, Keokuk, and Washington Counties, Iowa City, IA.

Donham K (2011) Webinar: Agricultural Musculoskeletal Diseases.

Donham K (2011) Webinar: Agricultural Hearing Loss and Other Physical Factors.

Donham K (2011) Webinar: Human Health Hazard of Veterinary Pharmaceuticals.

Donham K (2011) Webinar: Agricultural Respiratory Conditions.

Donham K (2012) Webinar: Certified Safe Farm Translation to Practice.

Donham K (2011) Workshop: Building Capacity. Agricultural Medicine: the Core Course. Marshfield Farm Medicine Center, Marshfield, WI.

Donham K (2011) Workshop: Agricultural Medicine: the Core Course, Vermont Farm Health Task Force, Burlington, VT.

Donham K (2011) Workshop: Agricultural Medicine: the Core Course, Lakes Technical College and ND Office of Rural Health, Devils Lake, ND.

Donham K (2012) Workshop: Agricultural Medicine: the Core Course, Marshfield Farm Medicine Center, Marshfield, WI.

Donham K (2012) Workshop: Agricultural Medicine: the Core Course, North Carolina Agromedicine Institute, East Carolina University, Greenville, NC.

Donham K (2012): Lecture: Personal protective equipment demonstration and use, Farm Progress Show, Boone, IA.

Donham K (2012) Workshop: Agricultural Medicine: the Core Course Central States Center for Agricultural Safety and Health, Omaha, NE.

Donham K (2013) lectures delivered to 12 Healthcare professionals enrolled in Agricultural Medicine: The Core Course, Greenville, NC. (n=14 lectures)

Donham K (2013) lectures delivered to 21 Healthcare professionals enrolled in Agricultural Medicine: The Core Course, Middlebury, VT. (n=14 lectures)

Donham K (2013) Presentation: "Confined space and grain safety" delivered to Agricultural Safety & Health Council of America, Minneapolis, MN.

Donham K (2013) Presentation: "Iowa's Center for Agricultural Safety and Health" delivered to Public Health, Extension, and Department of Agriculture personnel and farmers, Ames, IA.

Donham K (2013) Lecture: "Occupational and Community Health Concerns of Large Scale Swine Production" delivered to 150 college students, faculty, and community members at Grinnell College, Grinnell, IA.

Donham K (2013) Lecture: "Agricultural Health and Safety for agricultural Producers: Swine Production" delivered to 55 students and 2 faculty in the Agriculture 450 course at Iowa State University, Ames, IA. (n=4 lectures)

Donham K (2013) Presentation: “The Progress and Development of the Rural Health and Safety Clinic of Greater Johnson County”, delivered to the Johnson County Board of Health, County Board of Supervisors, Public Health Staff, and Community members.

Donham K (2013) Webinar: “SW Center for Agricultural Health, Injury Prevention, and Education Update” delivered to the AgriSafe Network.

Donham K (2013) Webinar: “High Plains Center for Agricultural Health and Safety Update” delivered to the AgriSafe Network.

Donham K (2013) Webinar: “SE Center for Agricultural Health and Injury Prevention Update” delivered to the AgriSafe Network.

Donham K (2013) Webinar: “National Children's Center for Rural and Agricultural Health and Safety Update” delivered to the AgriSafe Network.

Gerr F (2012) Keynote presentation at 2012 Midwest Regional Agricultural Safety and Health Conference, Cedar Rapids, IA.

Merchant J (2012) Rapporteur: UNC and UI CAFO Research Workshop, Chapel Hill, NC

Merchant J (2012) Commissioner and discussant: National Commission on Industrial Farm Animal Production Workshop—Update and Review. Center for a Livable Future, Johns Hopkins Bloomberg School of Public Health, September 30 - October 2, Baltimore, MD.

Peek-Asa C (2013) Lecture: “Rural Driving Interventions: from the street to the driver” delivered to Ohio State University College of Medicine Speaker Series attendees.

Peek-Asa C (2014): Participatory Research: How to keep the honeymoon going” to the NIOSH Science Forum in Washington DC.

Ramirez M. (2012) Lecture: “Fatality Assessment and Case Evaluation: Toxicology Testing in Fatally Injured Workers” delivered at the Iowa State Medical Examiners Meeting, Des Moines, IA.

Ramirez M (2013) Lecture: “Safe Driving Interventions for Rural Teens on Rural Roads” delivered to Nationwide Children’s Hospital Lecture Series.

Consultation or Information Exchange

Anthony TR (2011-12) Consultation: “Barn Air/Ventilation” walk through and discussion (n=3 producer sites).

Anthony TR (2012) Information Exchange: Study Results (poster and brochures) provided to intervention site.

Anthony, TR (2012) Information exchange with the Rural Health and Safety Clinic of Greater Johnson County about noise in rural settings.

Anthony, TR (2013) Consultation: Co/CO2 sensors for grain bins, via email with farmer/producer.

Anthony TR (2014): Consult with Farm Bureau regarding manure gas safety.

Anthony TR (2014): information exchange with 41 faculty, staff, and graduate students at the UM-IA Research Exchange Meeting, May 1-2.

Cheyney M (2014): information exchange with 41 faculty, staff, and graduate students at the UM-IA Research Exchange Meeting, May 1-2.

Donham K (2012) Information Exchange: "Library information services, hot line calls, research compendium, research to practice discussion" discussed in a conference call with the RAC of the GPCAH.

Donham K (2012) Information Exchange: "Designing and developing programming that is relevant to the farm population of the 4 country region of Johnson, Iowa, Washington, and Keokuk Counties" to the Rural Health and Safety Clinic of Greater Johnson County.

Donham K (2013) Consultation: ASH Curriculum Development Textbook Series development with North Carolina Agrimedecine Institute.

Donham K (2013) Consultation: meeting with National Ad Hoc Coordinating Committee on Agricultural Safety and Health.

Donham K (2013) Consultation: Agricultural Medicine Core Course – Vermont site.

Donham K (2013) Consultation: Simple Solutions for Farm Safety with the Iowa State University Design Center.

Donham K (2013) Consultation: Development of Agricultural Safety and Health Curriculum to certify members of ISASH with ISASH members and leaders.

Donham K (2013) Consultation: MRSA in swine with Grinnell students.

Donham K (2013) Consultation: Issue of CAFO moving into neighborhood with Davenport residents.

Donham K (2013) Consultation: Writing a certified safe program with Brazilian food producing company.

Donham K (2013) Consultation: Fatality in a swine firm with Virginia swine producing firm.

Donham K (2013) Consultation: Worker fatality in pork processing plant with law firm in NC.

Fethke N (2012) Consultation: Ongoing consultation on project within the Colorado State Agricultural Center.

Fethke N (2012) Consultation: "Employees reporting musculoskeletal symptoms", via email, farm owner utilizing "Ask an expert" service on GPCAH website.

Fethke N (2013) Consultation: "Best practices" for exposure assessment in research about ergonomics in agriculture with academics from a variety of institutions in the US and Canada.

Fethke N (2013) Consultation: potential collaborations with the director of Environmental & Occupational Health for the Migrant Clinicians Network.

Gerr F (2012) Member, Building Capacity Curriculum Revision Committee, 2012 Midwest Regional Agricultural Safety and Health Conference, Cedar Rapids, Iowa.

Gerr F (2013) Consultation: Proposal preparation/research methods with director of the Rural Health Clinic of Greater Johnson County.

Gerr F (2013) Consultation: Proposal preparation/research methods with personnel from Farm Safety for Just Kids.

Gerr F (2014): information exchange with 41 faculty, staff, and graduate students at the UM-IA Research Exchange Meeting, May 1-2.

Gerr F (2014): Consult with director of Rural Health and Safety Clinic about explosion hazards in hog CAFO.

Gerr F (2014): Information exchange about Personal Protective Equipment with AgriSafe Network staff.

Gerr F (2014): Consult and examination for patient with a high pesticide exposure event and unexplained symptoms.

Gerr F (2014): Consult with Nurse Practitioner about a clinical illness.

Gillette P (2014): information exchange with 41 faculty, staff, and graduate students at the UM-IA Research Exchange Meeting, May 1-2.

Harland K (2014): information exchange with 41 faculty, staff, and graduate students at the UM-IA Research Exchange Meeting, May 1-2.

Leonard S, Gerr F, Rohlman D (2014): Consult with agricultural employer in MN on Safety training for employees on a large farm.

Nonnenmann M (2013) Consultation: Grain bin safety resources with a Washington County Public Health nurse.

Peek-Asa C (2013) Technical Assistance: Rural road safety and rural bus crashes, with Iowa Department of Transportation.

Peek-Asa C (2013) Consultation: Advocacy & Testimony for Graduated Driver's Licensure.

Ramirez M (2013) Consultation: with DOT partners about meeting at Ag Summit to share results and get feedback on issues.

Ramirez M (2013) Information sharing: Rural Road Safety and Crash Data for Dubuque County Iowa with Dubuque County Health Department and IBM.

Ramirez M (2013) Consultation: Safe Play on Farms (in collaboration with Marshfield Clinic and CS-CASH) with American Family Insurance.

Ramirez M (2014): information exchange with 41 faculty, staff, and graduate students at the UM-IA Research Exchange Meeting, May 1-2.

Ramirez M (2013): Consult with John Deere, State Traffic Records committee, and Agricultural Equipment Manufacturers members about Farm Equipment.

Ramirez M (2013): Consult with DOT partners from 9 states about farm crash DOT data.

Ramirez M (2014): Consult with State Traffic Records committee, Department of Transportation about crashes on rural roads.

Rohlman D (2013): Consult with Sue Brumbey regarding the Building Capacity course.

Rohlman D (2014): Information exchange about developing counter-measures to nerve agents at the Counter Act Meeting.

Information Provided to Policy Makers

Anthony TR (2013) Swine Barn Explosion information provided to NIOSH/OSHA Liaison at information exchange meeting at request of Brad Husberg, Director NIOSH Office of Agriculture, Forestry, and Fishing.

Donham K (2012) Child Labor Law information provided to Senator Harkin's Staff.

Donham K(2013) Rural Health/Agricultural Safety & Health information provided at the Legislative Breakfast -- Iowa Legislation with Center for Rural Health.

Donham K (2013) Proposed Legislation for Roadway Use for ATVs provided to ICASH Board and Advisory Committee.

Donham K (2013) Grain Safety & Primary Care, a white paper review with the National Grain Safety Coalition.

Gerr F (2012): Impact of the Great Plains Center for Agricultural Health provided to the AFF Review Panel of the National Academy of Sciences, May 31.

Gerr F (2012): National Academies of Science. Re-review of NIOSH Agricultural Forestry and Fishing Program. Washington, DC.

Peek-Asa C (2013) Farm Equipment on Rural Roadways information provided to federal legislators. Washington, DC.

Peek-Asa C (2014). Rural Agricultural Injury data presented to Sen. Harkin & staff.

Peek-Asa C (2014). Rural Agricultural Injury data presented to Sen. Grassley & staff.

Peek-Asa C (2014). Rural Agricultural Injury data presented to Rep. Loebsack & staff.

Ramirez M (2013) Farm Equipment on Rural Roadways information provided to federal legislators. Washington, DC.

Ramirez M (2014). ATV data presented to an audience of 500 members of the Iowa legislature and County Supervisors (for all 99 IA counties).

Ramirez M (2014). Farm Crash data presented to the members of the Iowa congressional delegation.

Policy Reports, Technical Reports and White Papers

Donham K (2013) Grain Safety & Primary Care, a white paper review with the National Grain Safety Coalition.

Swanton A, Young T, Peek-Asa C, Ramirez M, Gerr F (2014). Trends in occupational fatalities in selected agricultural industries (2005-2010). Iowa City: The University of Iowa.

Swanton A, Young T, Peek-Asa C, Ramirez M, Gerr F (2014). Trends in occupational fatalities in selected agricultural industries (2005-2012). Iowa City: The University of Iowa.

Press Releases and Media Stories

Anthony TR (2012) "Safety Tips for Agricultural Workers: Lessons Learned through Fatality Investigations," *Farm Families Alive and Well* newsletter (18):2.

Anthony TR (2013) "Farmers slow to adopt technology that monitors grain bins remotely", Des Moines Register, July 25, 2013.

Anthony TR (2014) "New Iowa Model Weighs up Farrowing Room Ventilation Options". The Pig News website at <http://www.thepigsite.com/swinenews/34243/iowa-model-weighs-up-farrowing-room-ventilation-options>.

Anthony TR (2014) "Simulation of Air Quality and Cost to Ventilate Swine Farrowing Facilities in Winter". American Association of Swine Veterinarians at <https://www.aasv.org/news/story.php?id=6741>.

Donham K (2011) "Facilitating research to practice with community partners," *Farm Families Alive and Well* newsletter (18):1.

Donham K (2012) "Highlighting the Certified Safe Farm program," *Farm Families Alive and Well* newsletter (18):2.

Donham K (2012) "Building capacity is back," *Farm Families Alive and Well* newsletter (18):3.

Donham K (2012) "Facilitating research to practice at MRASH," *Farm Families Alive and Well* newsletter (18):4.

Donham K (2012) "The application or translation of the Certified Safe Farm Program to selected farms across the country," *Successful Farming Magazine*.

Donham K (2012) "Rural Roadway Safety," *Successful Farming Radio*.

Dunham K (2012) "MRASH 2012 – Reaping the Rewards" *Farm Families Alive and Well* newsletter (19):1.

Donham K (2012) "Agricultural Safety, Health Conference Announces Call for Abstracts," University of Iowa news release, June 11.

Donham K (2013) "Confined Space Hazards in Agriculture" *Iowa Pork Producers* magazine.

Donham K (2013) "Agricultural Medicine: a growing professional specialty aiming to keep farm families and their employees alive and well in agriculture", *Pioneer Growing Point* magazine.

Dunham K (2013) "Confined Space Fatalities: An Increasing Reality in Agriculture" *Farm Families Alive and Well* newsletter (19):3.

Gerr F (2012) "Two new agricultural health centers in the Midwest and a looming funding crisis," *Farm Families Alive and Well* newsletter (18):2.

Gerr F (2012) "Funding Threatened," *Trade periodical, Iowa Farmer Today* magazine.

Gerr F (2012) "Roadway safety continues to be major concern to agricultural producers," *Farm Families Alive and Well* newsletter (18):4.

Gerr F (2013) "Roadway Safety Continues to Be Major Concern to Agricultural Producers", *Ag Safety* online technical publication, May 2013.

Gerr F (2013) "AHS Examines High Pesticide Exposure Events", *Agricultural Health Study Update*.

Gerr F (2013) "Oh My Aching Back," *Farm Families Alive and Well* newsletter (19):2.

Gerr F, Leonard S (2014) "Hidden Risk" published in *Iowa Farmer Today*, Jan 2, 2014. Gerr (2014). "Safety tips to help agricultural workers beat the heat this summer". *The Waukon Standard*, Sept 2014.

Gerr F (2014) "Common sense, patience vital to ranch safety". *Progressive Cattleman*, May 15, 2014.

Gerr F (2014) "Raising awareness about farm safety in Iowa", press release, *Iowa Now*: Sept 23, 2014.

Gerr F (2014) "Stay Safe When Using Pesticides" *Farm Families Alive and Well* newsletter (20):2.

Gerr F (2014) "National Farm Safety and Health Week September 21-27" *Farm Families Alive and Well* newsletter (19):4.

Harland KK (2014) "Farm Crashes in Urban areas". *ASPH Friday Letter*

Masad J (2012) "Healthier pigs, less \$: Decreasing air pollution while increasing heating efficiency," *Graduate Education at Iowa* newsletter.

Ramirez M (2011) "Iowa FACE program warns of grain entrapment risk," University of Iowa news release, October 19.

Ramirez M (October 2011) "Prevent fatalities from grain entrapment," Iowa FACE Hazard Alert.

Ramirez M (2012) "Iowa FACE program warns farmers of tractor run-over risk," University of Iowa news release, October 30.

Ramirez M (October 2012) "2 Iowans killed when run over by tractors that were started while standing beside tractor," Iowa FACE Hazard Alert.

Rosmann K, Madsen M (2012) "Behavioral health services for farmers withering in drought too," *Farm Families Alive and Well* newsletter (18):4.

Unknown (2012) "Using the web to reach farmers," *Farm Families Alive and Well* newsletter (18):3.

Unknown (2012) "Moving research in agricultural safety and health to practice," *Farm Families Alive and Well* newsletter (18):1.

Rohlman D (2014) "Grain Silo Safety" on the Devine Intervention show, AM 1400 KBFT, Fort Dodge, IA. June 11, 2014.

Research Grant Proposals Submitted and/or Funded

Anthony TR. Design, Evaluation, and Validation of a Next-generation Inhalable Aerosol Sampler. (Funded 2012).

Gerr F. Submitted and Funded: Great Plains Center for Agricultural Health Administrative Supplement. (Funded 2012).

Gerr F. Submitted and Funded: Great Plains Center for Agricultural Health Non-Competitive Renewal. (Funded 2012).

Co-authored Grant Proposals Submitted and/or Funded

Becklinger N, Anthony R, Fethke N. Submitted to GPCAH Pilot Funding Program. Design and test of a self-report system for non-fatal accidents and near misses among agricultural workers. (Not Funded 2012).

Merchant J, LeVan TD, Kelly K. Genetic Variation in Endotoxin Receptors and Their Association with COPD Phenotypes. (Funded 2012).

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